Interventional and New Approaches to Stroke Prevention: Introduction

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Stroke-related mortality in the United States fell by nearly 35% between 1999 and 2008. Arguably, the reduction was largely the result of reduced stroke incidence, a reflection of improved prevention. Consistent with this observation, the failures of several recent secondary stroke prevention trials were, in part, attributable to lower than historically expected event rates in their medically treated control groups.

Preventive care is advancing, including the introduction of potentially safer and more effective alternatives for existing therapies. The advent of novel antithrombotics for stroke prevention in patients with nonvalvular atrial fibrillation is one example. Prescribed in place of warfarin, the use of these drugs in clinical practice present their own challenges. These include the absence of trials directly comparing the drugs, potential drug interactions, the short duration of follow-up experience, cost and compliance issues, and, as reviewed in this session, a lack of a readily available index of drug activity or a means of rapidly reversing their anticoagulant effects.

Cross-sectional but not prospective studies find that having a patent foramen ovale (PFO) is more common in patients who have an otherwise cryptogenic ischemic stroke. The clinical question is whether closing the PFO reduces the risk of recurrent events. The first large, randomized trial of a PFO closure device for secondary stroke prevention, CLOSURE-I, found no difference in event rates between those who did and did not receive the device. Other trials will help determine whether this lack of benefit might have been attributable to specific characteristics of the device used in CLOSURE-I or whether the strokes in these patients are commonly unrelated to the PFO.

Stroke associated with high-grade intracranial steno-occlusive disease carries a high risk of recurrence. The use of angioplasty/stenting is a logical approach to reducing this risk. The Stenting and Aggressive Medical Management for Preventing Recurrent Stroke in Intracranial Stenosis (SAMMPRIS) trial tested this concept, but found a greater risk of stroke or death with angioplasty/stenting. The result, in part related to the apparent effectiveness of an intensive medical management program, underscores the need for contemporaneous controls in all clinical trials. Event rates from past studies cannot be used to establish the efficacy of novel interventions.

Patients and their families are critical members of their healthcare team, and effective education is required to help ensure their informed participation in decisions that affect their lives. Yet, the most appropriate means of providing this education remains elusive. Knowledge alone does not necessarily change behavior. The science of behavior change may help address this critical gap.

Moderator Addendum: Since the Princeton Conference, preliminary results of 2 trials evaluating PFO closure for secondary prevention (Randomized Evaluation of Recurrent Stroke Comparing PFO Closure to Established Current Standard of Care [RESPECT] and Percutaneous Closure of Patent Foramen Ovale versus Medical Treatment in Patients with Cryptogenic Embolism [PC Trial]) were reported at the 2012 Transcatheter Cardiovascular Therapeutics conference, October 26, 2012.

Disclosures
Dr Goldstein is a Randomized Evaluation of Recurrent Stroke Comparing PFO Closure to Established Current Standard of Care [RESPECT] site principal investigator and served on the Neurology Executive Committee of the trial.

References

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